

REMARKS/ARGUMENTS

Claims 1 and 2 stand rejected under 35 U.S.C. 102(b) as being anticipated by Shimizu; claims 3, 4, and 9 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu in view of Watanabe.

Claim 1 has been amended to include the limitation of forming a trench with a first edge in said low K dielectric layer over said plurality of vias wherein said trench extends a minimum length of $0.2\ \mu\text{m}$ beyond the edge α of a via closest to the first edge of said trench. This limitation is not disclosed in the cited references. In describing this limitation the examiner states that, "it would have been obvious to extend the trench of Shimizu beyond the edge of a via closest to the first edge of the trench with a minimum length as claimed because such minimum would provide the same effects of preventing the peeling-off of the plugs from the metal wiring." The examiner further states that the Shimizu reference teaches extending the trench a minimum length (12b) for preventing the peeling-off of the plugs from the metal wiring.

Applicants have carefully examined the Shimizu reference and can find no such teaching. The Shimizu reference clearly teaches in col. 8, lines 42-53 that the methods for removing the fluorine from the surface of the copper wiring 10 prevent the peeling-off of the copper wiring 10 from the second silicon nitride film 11. The Shimizu reference describes 12b as pad trench and not as a structure to prevent peeling. The examiner's conclusion as to the teaching of some minimum length in the Shimizu is erroneous and amended claim 10 is allowable over the cited art.

Claims 2 and 4 depend on claim 1 and therefore contain all the limitations of claim 1. Claims 2 and 4 are therefore also allowable over the cited art.

Claim 9 comprises the limitations of forming a trench with a first edge in said low K dielectric layer with a first depth d_1 in said first region and a second depth d_2 at said trench edge over said plurality of vias wherein d_1 is greater than d_2 , and said trench

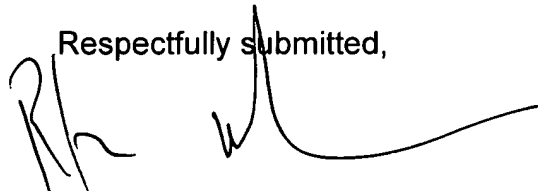
extends a minimum length of 0.2um beyond the edge α of a via closest to the first edge of said trench. As described above, these limitations are not disclosed in the cited references and for the reasons stated above, claim 9 is allowable over the cited art.

In light of the above, it is respectfully submitted that the present application is in condition for allowance, and notice to that effect is respectfully requested.

While it is believed that the instant response places the application in condition for allowance, should the Examiner have any further comments or suggestions, it is respectfully requested that the Examiner contact the undersigned in order to expeditiously resolve any outstanding issues.

To the extent necessary, Applicants petition for an Extension of Time under 37 CFR 1.136. Please charge any fees in connection with the filing of this paper, including extension of time fees, to the deposit account of Texas Instruments Incorporated, Account No. 20-0668.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Peter K. McLarty', is written over the typed name.

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Amendments to the Drawings:

Formal drawings are filed herewith replacing the informal drawings filed September 16, 2003.